

AIR WAR COLLEGE
AIR UNIVERSITY

NON-LETHAL AIR POWER--AIR MOBILITY'S OTHER MISSION

by

John D. Hauck, Jr
Colonel, USAF

A RESEARCH REPORT SUBMITTED TO THE FACULTY
IN
FULFILLMENT OF THE CURRICULUM
REQUIREMENT

Advisor: Col Steve Taylor

MAXWELL AIR FORCE BASE, ALABAMA
14 April 1995

DISCLAIMER

This study represents views of the author and does not necessarily reflect the official opinion of the Air War College or the Department of the Air Force. In accordance with Air Force Regulation 110-8, it is not copyrighted, but is the property of the United States Government.

Loan copies of this document may be obtained through the interlibrary loan desk of Air University Library, Maxwell Air Force Base, Alabama 36112-5564 (telephone [334] 953-7223 or DSN 493-7223).

ABSTRACT

TITLE: NON-LETHAL AIR POWER--AIR MOBILITY'S OTHER MISSION

AUTHOR: John D. Hauck, Jr., Colonel, USAF

Air Force Manual (AFM 1-1), Basic Aerospace Doctrine of the United States Air Force, fails to classify Air Mobility as a weapon of deterrence. The basis of this failure lies in the doctrine's narrow definition of aerospace power. AFM 1-1 limits the use of this power solely for military purposes. However, aerospace power has a much broader application. As an instrument of national power, it can also be applied in non-lethal ways to achieve our national objectives. An analysis of Air Mobility's history proves this to be true.

BIOGRAPHICAL SKETCH

Colonel John D. Hauck, Jr. is a career air mobility pilot with experience in the C-141 and KC-10 aircraft. He served as an operations officer and squadron commander in the C-141 and as an operations group commander in the KC-10. His background also includes experience in Military Airlift Command command and control and air transportation. He holds a M.A. degree in Management and is a graduate of the Army's Command and General Staff College. Colonel Hauck is currently a student in the Air War College, class of 1995.

TABLE OF CONTENTS

DISCLAIMER	ii
ABSTRACT	iii
BIOGRAPHICAL SKETCH	iv
INTRODUCTION	1
Chapter	
I FROM NATIONAL INTERESTS TO DOCTRINE--THE MAKING OF NATIONAL STRATEGY	4
National Interests	4
National Objectives	6
National Power	7
Doctrine	11
Air Force Doctrine and Aerospace Power	11
II A HISTORY OF NON-LETHAL USES OF AEROSPACE POWER THROUGH AIR MOBILITY	14
The Genesis of Air Mobility	15
Air Mobility Matures	17
III IT'S TIME WE EXPAND OUR AIR POWER DOCTRINE	27
National Strategy in the Nineties	27
Meeting the Challenge	30
Recommendations for New Doctrine	30
The Future	33
BIBLIOGRAPHY	34

INTRODUCTION

While the need for air mobility in a supporting role is a given, Air Force doctrine fails to classify air mobility as a weapon of deterrence. According to Air Force Manual (AFM) 1-1, Basic Aerospace Doctrine of the United States Air Force, the *raison d'être* of the Air Force is war and, "war is generally the instrument of last resort reserved for those issues deemed vital (disputes that cannot be resolved using nonviolent instruments of policy)." [2:v]. Because of this philosophy, the major portion of aerospace doctrine focuses on the end result of conflict--combat. Many war fighters out there believe there is nothing wrong with this philosophy. They believe war is what we should be preparing for and nothing less. I would argue that this philosophy is flawed. While I agree we should be prepared to fight and win wars, the concept of air power means more than the lethal application of "putting bombs on target." Doctrinally, we should address the full spectrum of aerospace power to include its non-lethal application. That is, aerospace power can be used as a weapon to deter wars rather than fight them.

From an historical perspective, pre-World War II air doctrine focused on the invincibility of manned bomber formations, whereas post war doctrine stressed the need for nuclear bombardment. Both the pre-war and post-war doctrine failed to address the true flexibility of air power application. [54:5] This shortsightedness is due, in part, to the obsession of early air power theorists' with their love of flying and the means to justify it...combat. In his book, *The Icarus Syndrome*, Carl Builder postulates that the Air Force has been overly focused on the fast, manned combat bombers to the detriment of other systems and capabilities that deserve equal recognition if we are seriously committed to serving our nation's interests. [17:285] These attitudes continue to exist today. After all, how many times have we heard from our top leaders that the Air Force mission is to fight and win wars and nothing else?

Aerospace power has a far broader application as an instrument of national power than pure combat operations. History has proven this to be true. During the first 45 years since the United States Air Force was created, our presidents have called upon the military's airpower forces to support national interests and objectives over 600 times. Of these, only 10 can be classified as actual combat operations. The other 600 plus instances can be classified as non-lethal operations to support America's interests. [62: Annex]

In a vast majority of these non-lethal applications of air power, America's air mobility forces (airlift and air refueling) have assumed the primary role. Time and again, air mobility has demonstrated that non-lethal aerospace power has an important part to play in achieving our national objectives. By using air mobility, we have demonstrated to our allies and enemies that the US has the resolve to protect our nation's interests. When necessary, we can use these resources where we choose, around the globe, for conflicts of interest up to and including war.

If doctrine is a guide to future applications of resources based on past achievements, then the next writing of Air Force doctrine should recognize the non-lethal application of aerospace power in pursuit of national objectives. This paper will show how air mobility has been used as a non-lethal means of force to fulfill many of our national interests and objectives throughout history and explain why this aspect of air power should be given more exposure in our future doctrine.

However, before doctrine can be changed, an understanding of national security strategy is required, since strategy and doctrine are interrelated. So, chapter one will be a primer on the development of national security strategy including a discussion of its various principles. These principles include: national interests, national objectives, national power, and doctrine. Finally, this chapter will examine current Air Force doctrine and show why its role as a guide to the application of aerospace power is flawed. Since history is our guide to formulating doctrine, chapter two will be devoted to a review of some historical achievements of the non-lethal uses of Air Mobility. The examples will be used to show how strategic air mobility has played a major part in directly supporting our national objectives and how air mobility evolved. Chapter three, the final part of this paper, will pull chapter one and two together and discuss the current national strategy and future applications of Air Mobility in support of national interests. This chapter will also include recommendations for new doctrine which includes heavy emphasis on the non-lethal application of aerospace power. As Carl Builder stated, "The nation's interests in the future, as in the past, are likely to be better served by the diversity than by the scale of capabilities offered by the Air Force."

[17:285]

CHAPTER ONE

FROM NATIONAL INTERESTS TO DOCTRINE--THE MAKING OF NATIONAL STRATEGY

Making strategy is a process that relates means to ends. The process is an art that turns something abstract into something concrete. Strategy helps to clarify the ends. It requires the use of resources to achieve a stated goal or set of goals. Usually the term strategy implies a military application involving a plan of action to achieve a desired outcome.

Strategy does not have to relate only to military applications, however. It can be adapted to the needs of a nation. Making national strategy is a "building block" process of "determining what interests the nation has, what priorities to place on various interests, and what national instruments of power are available, appropriate, and acceptable for achieving individual interests and the aggregate of those interests." [24:43]

The remainder of this chapter will detail the elements that go into the process of making national strategy. This chapter will also address the issue of doctrine and provide an understanding of its relationship to national strategy. Finally, we will end with a discussion on Air Force doctrine, its relationship to aerospace power, and its limitations.

National Interests

In his National Security Strategy of Enlargement and Engagement, President Clinton believes it is his administration's "foremost duty" to "protect our nation's security--our people, our territory and our way of life." [61:i] These are, in very general terms, our national interests. But, how are national interests defined and how do they relate to making strategy?

During a recent Air War College lecture, one speaker defined national interests as "those issues, events, or situations in different regions of the world for which there is a particular claim to participate in the outcome of which is important to the nation." This definition implies that national interests are international by nature. That is, "vital interests normally do not exist within domestic society, but only within the relations (international politics) between sovereign nation-states." [24:28] So what does this mean? It means all nations have interests and sometimes interests may clash with other nations' interests. When this situation

occurs, conflict arises and nations are forced to judge how vital their interests are relative to their willingness and ability to protect them. They must decide whether the conflict is worth going to war over or choose to resolve the conflict by finding some other way to settle it. Therefore, it becomes evident that there must be some prioritization of national interests to determine the amount of resources a nation is willing to apply to achieve or protect its own interests.

In their book, *Making Strategy*, Col Drew and Dr Snow characterize vital interests as "one on which a nation is unwilling to compromise" or "one over which a nation would go to war." [24:28] An example of a vital interest in this situation would be if one nation violates the sovereign territorial integrity of another nation-state. The nation-state which is being violated would most likely feel compelled to go to war to gain back its territory.

All nations have a variety of national interests, some of which rank higher in priority than others. Donald Nuechterlein developed a "national interest matrix" which delineates four levels of intensities of national interests. [24:28] The first level of intensity is concerned with survival. This is the most basic level of interest a nation must defend if it wants to continue to exist. All other interests are meaningless if a nation fails in its ability to survive.[24:29]

Nuechterlein's second intensity level is vital interest. This level relates to situations where serious harm to a nation-state would occur if it failed to act aggressively to protect its interests. A nation's actions might include the use of force in this circumstance.[24:29] Israel's attack on Iraq's nuclear power plant was a clear example of an aggressive act to protect one's interests. Israel feared Iraq would use the nuclear by-products from this plant to build nuclear weapons which could be used against them.

The third intensity level of interest concerns "circumstances where a country's political, economic, or social well-being may be adversely affected, but the use of armed force is not necessary to avoid outcomes." [24:30] An example of this situation might be when one country levies a trade embargo on another nation whose economic survival depends on the goods that nation receives from the other. This situation may be resolved through diplomatic channels rather than through the use of force.

Nuechterlein's fourth level of interest is peripheral interests. These are circumstances where a nation as a whole is not necessarily impacted as a consequence even though some national interest is involved.[24:30] A present day example of this situation involves the immigration problem along our

bordering states with Mexico. Even though it is in our national interest to protect our borders, this particular problem does not directly impact our country as a whole.

Precise identification of national interests and where they fall into Nuechterlein's matrix of intensity levels is crucial in the development of national security strategy. Because, from these interests national objectives are determined.

National Objectives

National objectives are the goals a nation pursues in order to further or protect its interests. They are usually categorized into political, economic or military objectives, however, they are not mutually independent of each other. When nation-states fail to achieve their political objectives through peaceful means, they usually resort to war through the use of lethal military power. Nation-states go to war for a variety of reasons including territory, ideology, economics, nationalism, cultural and religion. However, trying to determine a single cause for war can result in erroneous and perhaps dangerous assumptions. [2:2] Therefore, if war is to serve a rational purpose, it is vitally important that "national interests and political objectives be clearly understood so that meaningful, attainable, and measurable military objectives can be derived from them, and the objectives should be worth the cost of war." [2:2] Additionally, in order for nation-states to pursue rational policies concerning their interests, they must be cognizant of their limits of power. In making strategy, the power a nation possesses is commonly referred to as national power.

National Power

Former Secretary of Defense, Harold Brown, defined the concept of national security as having "the ability to preserve the nation's physical integrity and territory; to maintain its economic relations with the world in reasonable terms; [and] to protect its nature, institutions and governance from disruption from outside." [44:151] The key word in this quote is "ability" because its meaning implies knowing how to use a nation's power to protect its interests. But, what is power?

Power is being able to influence others into doing something they may otherwise not do. As Samuel Huntington puts it, "Power enables an actor to shape his environment so as to reflect his interests. In particular, it enables a state to protect its security and prevent, deflect, or defeat threats to that security. . . . It

also enables a state to promote its values among other peoples and to shape the international environment so as to reflect its values." [34:3] It is only natural for nations to pursue enough power to guard their security, to promote their ideals, and to influence other nation-states in ways that will exploit their interests and values. Nations acquire power through a variety sources. Power is "derived from tangible and intangible sources which are not static or absolute. Tangible sources include geography, economic wealth and infrastructure, technological development, civilian manpower, and military forces and hardware. Intangible sources include culture, ideology, history, national will and morale, government efficiency and responsiveness, diplomatic skills, alliances, international prestige, and recent success or failure in political-military affairs." [2:3] When referring to national power, the US Government categorizes these sources into four elements or instruments of power: political, economic, informational and military. [36:I-7]

The political element of national power is commonly recognized as the primary tool used to prevent or resolve issues between nation-states. Even though all elements of power are highly interrelated and should be used concurrently, the primary focus is usually on reaching political solutions. The effectiveness of political power is dependent on a nation-state's political position relative to other nation-states and the diplomatic skill that can be brought to bear in pursuit of its national interests.

When political power fails to reach desired results, other elements of power (economic, informational, and/or military) may be introduced to influence a resolution. For example, in areas where US interests are threatened, efforts to restore stability and bring about solutions favorable to US objectives are handled diplomatically by drawing on all elements of power. In such situations, a highly visible demonstration of military presence, supported by strong political and public approval, demonstrates the "firmness of US commitments to allies and friends." [36:I-7] This motivates adversaries to work seriously toward reaching a favorable conclusion to hostilities.

The economic strength of a nation is also an important element of power. A healthy economy enables a nation to raise the standard of living for its people, which makes for a more cohesive society. A cohesive society means a more stable populous and, therefore, a stronger nation.

A strong economy also provides a greater variety of options a nation can use to influence outcomes. "Economic assistance or preferential trade relationships can be used as positive inducements (carrot) to produce desired behavior, and the threat of withholding aid or using quotas of tariffs to disadvantage trade

can be a sanction (stick) if another country does not take desired action." [24:37] For the US, it means being able to influence open markets and trade with a goal of expanding our market system, maintaining a strong competitive currency and working to achieve a trade surplus. Again, the degree in which economic power is used successfully depends on the diplomatic skill in managing favorable financial and trade transactions. The US uses its economic strength to help reduce instability in Third World countries through economic development assistance and financial aid programs. This supports a US objective that a stable democratic nation with a growing and healthy economy will contribute to regional and global stability. Hence, a more stable world for us expands our economy and market influence, thereby, increasing our economic power. The informational element of power (public diplomacy, public affairs, psychological operations, and education) enable a nation to augment its traditional diplomacy actions by explaining its policies to other nations and educating them on their culture and society. Informational power can also be used as a source of providing factual information to counter hostile propaganda and disinformation. Information systems (CNN International and Internet) help explain to other nations US intentions and objectives. Diplomatic, economic, and military contacts do the same as well. "Clearly articulated US goals will reduce friction and facilitate unity of purpose. This, in turn, makes it harder for adversaries to drive wedges between the United States and its allies or an ally and its citizens." [36:I-8]

Military power is the "extent to which a nation's armed forces can be employed to achieve national ends." [24:36] Depending on its strength, military power can provide the leverage (big stick) a nation may need to favorably achieve its objectives.

The strength and effectiveness of a nation-state's military power is measured by a variety of characteristics. These include, size and quality of forces, speed, agility, versatility, lethality, use of technology in weaponry and hardware, command and control, and leadership. All of these characteristics go into measuring the military's ability to exploit the land, sea, and aerospace environment in protecting their nation's interests and supporting their aims.

Nation-states can apply military power across a broad spectrum of situations to influence events. This spectrum can be further broken down into two major applications, lethal and non-lethal military power. The lethal application of military power means applying combat power against targets with bullets or bombs.

In other words, lethal power implies destroying something. Non-lethal application of military power means using a non-destructive force to influence an outcome which supports a nation's goals.

Lethal application of military power is the result of the failure of all other instruments of power. Non-lethal application of military power is used as a coercive force to deter, compel, assure, or induce. [2:56] The US military does this through a variety of operations to include, humanitarian assistance, disaster relief, nation assistance, security assistance, foreign internal defense, counterdrug operations, arms control, support to domestic civil authorities and other government agencies, evacuation of noncombatants, and peacekeeping.[35:I-4] Chapter Two will include examples of these types of operations in which the US has participated.

As with the other elements of power, the true effectiveness of a nation-state's military power depends on the skill of its military leaders. In today's highly sophisticated world, good military leadership is required to effectively orchestrate all of its resources then incorporate that power with the other elements of power to successfully achieve a nation's political goals.

However, like all of the other elements of power, military power does not act independently. For example, nations with a strong economy can afford to build larger and stronger armed forces. The nature in which nations use their armed forces depends on the political skill of its leaders.

To that end, the elements of national power "are highly interrelated and thus, cannot be viewed in isolation. In modern warfare, military success or failure depends on the national economic, technological and industrial base and the extent to which that base can be mobilized and applied to the war effort. At the same time, military spending is a significant part of the American economy, and the nation's economic health depends to some degree on the diplomatic skill in negotiating favorable trade agreements with foreign governments. To complete the circle, diplomatic success depends on activities that can be backed up by the economic and military rewards or sanctions." [24:39]

Doctrine

Doctrine is a "set of beliefs based on historical precedent that forms a framework" for future action. [54:2] Experience is the primary source for doctrine. It is a collection of those things which were tried and proven successful in the past. Some of those things were modified and improved upon over time. As such,

doctrine continues to mature and evolve. Therefore, it is a living document, so it must be flexible and frequently reviewed. It must never be allowed to become so stagnant or rigid as to prevent new ideas and uses from being explored and later added when proven successful.

Doctrine is a key element in developing National Security Strategy. Strategists need doctrine as a reference to guide them in their decision-making. Without doctrine they would be in jeopardy of repeating past mistakes. Drew and Snow summed it up best when they wrote, "Doctrine influences strategy and the results of strategy become the experiences that are the basis of doctrine." [24:173]

Air Force Doctrine and Aerospace Power

Each of the military services (Army, Navy, Air Force, and Marines) have their own doctrine and all of them look to their doctrine as guiding principles to be employed in future operations. However, all of the services, except the Air Force, state in their doctrine that their reason for being is to conduct war and operations other than war in support of national objectives. As an example, the Army defines doctrine as a "statement of how America's Army, as part of a joint team, intends to conduct war and operations other than war." (emphasis added) [27:1-1] For the most part, Air Force doctrine focuses primarily on war and the lethal applications of aerospace power. Very little attention is given to the other non-lethal applications of aerospace power that can be, and have been, used as a force by our country for situations other than war. AFM 1-1 defines aerospace doctrine as, "what we hold true about aerospace power and the best way to do the job." The manual further states that "doctrine is what we have learned about aerospace power and its application since the dawn of powered flight." [1:vii] Unfortunately, AFM 1-1 fails to address the concept that aerospace power can be used as an instrument of power in concert with other instruments of national power, political, economic and informational, to deter war and/or support our national objectives. The basis of this failure in our doctrine originates in chapter two of the basic manual. It states, "Aerospace power grows out of the ability to use a platform operating in or passing through the aerospace medium for military purposes (emphasis added)." [1:5] This concept of aerospace power is faulty because it implies the only measure of aerospace power is by exploiting the aerospace continuum solely for military reasons. Aerospace power does more than that. According to Donald Rice, Former Secretary of the Air Force, "Aerospace power gives America unique strengths for building influence and extending a helping hand

around the globe." It also provides our allies and friends assurances that we are with them. America's ability to reach out around the globe using aerospace power sends a signal to our adversaries that distance will not inhibit us from coming to the aid of our friends if they need us. [56:298-303]

Because of its narrow definition of aerospace power, AFM 1-1 imposes limitations on the roles in which aerospace power can be applied. The current doctrine, attempts to divide aerospace roles and missions into four basic areas: aerospace control, force application, force enhancement, and force support. It further explains that "aerospace force application" includes the role of applying "combat power against surface targets" exclusive of anything else. This is where the doctrine narrows the role of aerospace power. This definition of force application fails to include the concept that aerospace power can be applied as an independent force for the achievement of national objectives. In other words, it does not address directly "the concept that military power, especially aerospace power, may be used to influence situations before counterinsurgency, counterterrorism, raids, or unconventional warfare become necessary. [14:37] Our current aerospace doctrine fails to mention that our goal should be to achieve our national objectives through all other means before resorting to the direct application of combat force. AFM 1-1, falls woefully short of exploiting the non-lethal application of aerospace power in supporting national objectives. In that light, our current doctrine fails to include what we have really learned about aerospace power since "the dawn of flight."

CHAPTER TWO

A HISTORY OF NON-LETHAL USES OF AEROSPACE POWER THROUGH AIR MOBILITY

Since the pioneering days of flight, air mobility (a non-lethal instrument of national power) has been the weapon of choice to serve our country's needs. Military power does not always have to be used for combat. "Part of global reach and global power is employing air and space forces to accomplish national security objectives by building influence abroad." [56:303]

Throughout history, air mobility has provided our nation the ability to project power on a global basis without resorting to the use of combat. Because we are an island nation, separated from the rest of the world by large bodies of water, air mobility, with its speed, range and versatility has provided our presidents the tool they needed to respond quickly "to enhance security conditions, strengthen security partners, and project US influence", without using lethal force. These mobility operations are classified as air movements of national influence (AMNI) and humanitarian relief (HR). [62:123]

AMNI operations usually have obvious geopolitical overtones including the delivery of critical weapons or supplies, movement of allied and third world forces, positioning of US forces, and evacuation of US citizens or foreign nationals. HR operations are typically conducted in response to natural disasters, such as, floods, earthquakes, hurricanes, fires, plagues and famine. [62:124]

When disaster strikes, speed is critical in saving lives and property. Air mobility provides the only means of getting relief to disaster sites quickly. HR operations support US national security objectives by providing the rest of the world a favorable image of the US. This can have an indirect effect on diplomacy. For example, when earthquakes struck Algeria in October 1980, US airlifters responded immediately by delivering relief supplies to the stricken country. This operation helped to strengthen the bond of a previously tenuous relationship between the two nation-states. Several months later, Algeria agreed to act as the crucial mediator in securing the release of US hostages from Iran. [62:125-126]

The purpose of this chapter is to explore the evolution of air mobility and how it came to be a viable non-lethal instrument of national power. The chapter will take you from its genesis to the present day configuration of air mobility. Interspersed throughout the chapter are examples of how air mobility and its doctrine matured through time and experience.

The Genesis of Air Mobility

Airlift had its start in 1908, when Lieutenant Frank P. Lahm flew as a passenger on a brief flight piloted by Orville Wright. This event highlighted the first of many possible uses of the airplane for the military. Two years later, two Army officers tested the use of the airplane to transport patients. They abandoned their test due to technical problems and failure to obtain financial backing. However, in 1918, two other Army officers, Captain Nelsen E. Driver, a medical officer, and Captain William C. Ocker, Commander of Flight Training at Gerstner Field, Louisiana, tried again by modifying a JN-4 Jenny to transport patients on litters. After a successful test flight, the Army Air Service directed that every air field have an air ambulance. Also in that year, Army Signal Corps pilots began regular airmail service, flying between Washington, DC, and New York City. The flight was 218 miles long with an operational stop in Philadelphia to change planes and pilots. [15:1] This was the forerunner to our modern day stage operations.

The first humanitarian mission occurred in 1919 when the President Woodrow Wilson ordered the Army to deliver air dropped food supplies to flood victims in Texas. Curtiss NC-4s from Kelly Field and Corpus Christi, Texas were used in these missions and other similar flood relief missions in Ohio and Colorado. It was also in that year the Army began flying fire watch missions for the US Forest Service in California. [20:76]

One day late in 1921, Wesley May, a stuntman who dazzled crowds at airshows by bicycling and roller skating atop the wing of airplanes, strapped a five gallon can of gasoline to his back, walked out on the wing of a Curtis JN-4 Jenny and proceeded to pour the gasoline in the fuel tank. The spectators watching this dare devil feat witnessed the first inflight air refueling ever attempted. [11:1] Two years later, under the direction of Major Henry H. "Hap" Arnold the Army Air Corps tested the feasibility of air-to-air refueling using two airplanes by successfully completing an inflight hose contact but, without transferring any fuel. Then, in June of that year, Lieutenants Lowell Smith and John Richter conducted the first successful air-to-air refueling flying 6 hours and 38 minutes over San Diego, California in a De Havilland DH-4B. The tanker aircraft, also a DH-4B was flown by Lieutenants Virgil Hine and Frank Siefert. [15:4]

The most historic air refueling flight occurred in 1929, when Major Carl A. Spaatz, commanded a modified Fokker C-2A, the Question Mark, on a world record 150 hour and 40 minute air-to-air refueling and

duration mission. Two tanker aircraft, modified Douglas C-1 biplanes equipped with 150 gallon cabin tanks, took turns providing the fuel through a hose to the Question Mark shuttling between Santa Monica and San Diego, California. A total of 5700 gallons of fuel plus, oil, food and water were passed along during the refueling contacts. All officers on the Question Mark, Spaatz, Ira Eaker, Harry Halverson and Pete Quesada became general officers, as did two on the tanker aircraft, Ross Hoyt and Joseph Hawkings. This landmark flight signified the practical value of inflight refueling and crew duration. [11:2-6]

Between 1920 and 1930, the Army experimented with various facets of air power. Most of the experiments were associated with combat because the air enthusiasts at that time associated air power with battlefield surveillance and ground support of the Army. The use of airplanes for air transportation were not a priority with Army leadership. It was not until the conclusion of their first air maneuvers in 1925, that the Army became convinced that "air transports are essential for the movement of an Air Force." As such, in 1926, President Coolidge signed into law the "Air Corps Act" which changed the name of the Air Service to the Air Corps, created an assistant secretary of war for air authorizing air sections within the War Department, and initiated a five year expansion for the Air Corps. In this five year expansion, there were plans to build 3,530 airplanes 158 of which were to be cargo airplanes. [52:3-13]

At the conclusion of another series of maneuvers in 1927, the Commandant of the Air Corps Tactical Training School (ACTS) recommended a demonstration to test the practicality of supporting Army Air Corps troops by air. In the demonstration in 1928, 14 bombers successfully transported nearly 74,000 pounds of equipment and personnel between Virginia Beach and Langley Field, Virginia. This exhibition of air power validated the concept of air mobility and marked, in many peoples' minds, the end of the pioneering years of aviation. [52:3-13]

Air Mobility Matures

In the early 1930s, the Army's Materiel Division established "air depots" to fly supply items between the depots and air fields. LtCol Albert Sneed, Commander of the Fairfield Air Depot, presented what is perhaps the first visionary concept of air mobility as an instrument of air power. He postulated that Air Corps officers had too limited of a view of air power. That they only thought of air power in terms of destroying things. He suggested that, "there was a larger area of action, the field of transportation." He thought air

transportation should move to a position of equality with rail and motor transport. Despite gaining General Arnold's interest in this idea, air transportation made little progress prior to World War II . [52:13-19]

Even though no written doctrine came out of the Army Air Corps between 1920 and World War II, according to LtCol Charles E. Miller, there were five tenets of unpublished air transportation doctrine being practiced. They are paraphrased as follows:

- The primary role of military air transportation is to support the air forces to which it belongs and will be controlled by them.
- Military air transportation is vital to the flexibility and mobility of air forces.
- Military air transportation is important as a logistics tool for the entire air force.
- Military air transportation is less important than the development, acquisition, and operation of combat forces.
- Civil air transportation will augment the military in wartime to save the expense of building an organic capability in peacetime. [52:19]

When the Lend Lease Act became reality in 1941, General Arnold recommended that the Air Corps do the ferrying of airplanes. He thought this would give air crews a great opportunity to improve their flying skills by flying the most modern aircraft. President Roosevelt approved General Arnold's recommendation and established the Air Corps Ferrying Command on 5 June 1941. [52:27-28] This new Command was the forerunner of today's Air Mobility Command. It assumed the ferrying duties of American made aircraft to the United Kingdom as part of President Roosevelt's program to help England with their war effort.

During this same period, the Army Air Corps also established the Air Services Command, whose mission it was to transport the Army's ground and paratroopers. The Navy was also establishing their own air transport service. These separate commands with similar missions led to confusion in the field because commanders could not discern which command was supposed to support whom. Hence, on 20 June 1942, the Air Corps put the Army's air transportation services under one command and called it the Air Transport Command (ATC). [52:32-34]

With the creation of ATC and through the end of World War II, airlift doctrine began to emerge. Because most field commanders did not realize the value in air transport, ATC's first commander Brigadier General Harold George, convinced the AAF to issue a memorandum to all branches of the Service explaining the merits of air transport. The AAF's letter pointed out that air transportations' ability to move men and materials rapidly between the US and European theaters shortened the time of getting to the battle from months to days. [52:36]

ATC got its chance to prove their mettle when General Arnold directed the Command to assume responsibilities of helping the Chinese in their fight against Japan by airlifting critical supplies over the Himalaya mountains, otherwise known as the "Hump." The Himalaya air route was the only means of linking Generalissimo Chiang Kaishek's Chinese National Army to the outside world, as the Japanese had closed all the supply lines running through Burma. President Roosevelt promised China that the US would offer help, hoping that this would keep China in the war. But, the operation was not an easy feat. The Himalayas presented a challenge to the US airlifters. Their high mountain peaks, bad weather, and interference from Japanese fighters made the operation extremely treacherous. Over the three year course of flying the "Hump", ATC recorded 701 major accidents, losing 792 men and 460 aircraft. However, through it all, ATC conducted 167,285 trips over the several hundred mile aerial pipeline airlifting nearly 740,000 tons of war supplies. This totalled 81 percent of all supplies entering China. Had it not been for this incredible application of US air power, China would not have been able to resist the Japanese. Had the Japan won a victory there, they could have moved the majority of their forces to the Pacific, making the island hopping operations more costly for the Allies than they were. [51:36-42]

The "Hump" operation had a favorable affect on the future of airlift. Researchers who worked on the Strategic Bombing Survey following the war recognized the importance of air mobility and its inherent contribution to air power. It was an air movement of national influence that demonstrated the flexibility of air power in meeting the urgencies of non-traditional situations. In the final analysis, The Hump Airlift proved that air mobility must be added to our nation's arsenal of power as an instrument to be used in influencing the development of American foreign policy and security strategy. [51:42]

At the end of World War II, strategic airlift doctrine began to emerge. The following describes what our air power theorists learned about the merits of airlift during the war:

- Strategic airlift, as a function of air power, supports all of the Department of Defense, not just the air component.
- Strategic air power is a vital element of national military strategy.
- Strategic airlift has the flexibility to perform combat supply by air, through airland or airdrop operations.
- Strategic airlift will exist in peacetime at minimum strength, but will be prepared to expand during wartime.
- Strategic airlift is a complex operation requiring an extensive system of bases, management by air transportation experts, and a program to control user priorities. [52:73-74]

When the Air Force was made its own service by the National Security Act of 1947, it was given sole responsibility of all Department of Defense air transportation needs. As such, the Military Air Transport Service (MATS) was born 1 June 1948. Only 25 days after its formation, MATS was called upon to perform what was to become one of the Service's most significant missions--the Berlin Airlift. [52:174]

Called "Operation Vittles" the Berlin Airlift marked the first event in US history where air power was used for diplomatic purposes. Officially, the Berlin Airlift was categorized as an AMNI operation but, as its name, "Operation Vittles" implies, it could also be classified as a HR operation. [62:21]

When the Soviets imposed a land blockade on the city of Berlin, reinforced by 30 full Army divisions to the east, the US realized they must find an alternative solution to the crisis besides combat. To the Soviets, their blockade represented a means of asserting itself as a world power. They gambled that Western Europe, still recovering from the war, was too weak to fight and that the US could not stomach another war. Additionally, the Soviets believed that airlift could not support the daily survival needs of two million Berliners. As it was, the Soviets were right on all accounts except one, the power of US airlift. [51:69]

From 26 June 1948 until 1 August 1949, the US demonstrated its resolve by coordinating the airlift of over 2,223,000 tons of supplies in 266,600 flights. It was truly a combined effort involving units from the US Air Force, US Navy, Great Britain, Australia, New Zealand, and South Africa. At its peak, 886 trips per day, at 60 second intervals between takeoff and landings, were happening around the clock. Poor weather conditions, a highly congested airspace, and a feverish operations tempo on the ground presented serious command and control challenges for the air transportation managers. But, in the end, the Berlin Airlift demonstrated the impressive capabilities in its application of non-lethal air power. After months of negotiations, the Soviets finally agreed to end their blockade on 12 May 1949. [52:175-182]

A myriad of conclusions were drawn from the Berlin Airlift. Some of these conclusions were offered by General Tunner, commander of the Combined Air Lift Task Force (CALTF). They were:

- The success of the airlift was due to the spirit of jointness and cooperation of allied forces.
- The economy of large aircraft (the C-54) was more efficient and effective than smaller aircraft (the C-47).
- That airlift can transport personnel and cargo anywhere in the world under any conditions. This will be a vital factor in future operations. [52:181]

General Lucius Clay, military governor of the American zone in Berlin, also provided what he observed as lessons learned. His observations included:

- America's prestige zoomed to new heights by succeeding in a seemingly impossible task.
- America's effort proved its commitment toward rebuilding a sound Western European economy.
- America's effort raised the morale of the European people demonstrating our resolve not to leave them as prey to totalitarian domination. [25:15]

Perhaps more than any other lesson learned from this experience was that airlift provided a non-lethal means by which to allow time for policy makers to negotiate a peaceful settlement to conflict. Thus, another tenet to be added to air mobility doctrine.

The period between the Korean War and 1966, are known in the airlift community as "the turbulent years." This was a time when both tactical and strategic airlift grew in size and exercised its capabilities. Unfortunately, the period was marred with arguments over the roles and missions of each of the two forces and the impact strategic airlift was having on civil aviation. Fortunately, there was one bright spot during this period. MATS conducted a large mobility exercise between the US and Puerto Rico, called Operation Big Slam, to test its surge capability. Upon completion of the exercise, MATS published a mobility manual for "planning and conducting contingencies operations." The significance of this document was the vision it presented of airlift based on twenty years of experience. It said, "The Military Air Transport Service is an essential element of the United States military instrument of national power. Therefore, within its functional area, it must be capable of supporting the strategy that military or other government agencies evolve to achieve national objectives. All elements of MATS must be prepared to operate in unity with and/or in support of other elements of the Air Force, other military services, other agencies of the government and the forces of the allied nations." [52:275] This was yet another example of how air mobility doctrine was maturing.

The next significant event in the history of US air mobility occurred in 1973 just as the US was ending its involvement in Vietnam. On 6 October 1973, Egypt and Syria simultaneously attacked Israel. At the mercy of a two-front war with rapidly dwindling supplies and the Soviets' commitment to resupply Egypt and Syria by way of airlift, Israeli Prime Minister, Golda Meir, asked President Nixon for urgent help. In response, the US began airlifting supplies on 13 October under the operation nicknamed "NICKEL GRASS". For the next 32 days, Military Airlift Command (MAC) delivered 22,318 tons of cargo on 567 missions,

outperforming the Soviets. What made this even more noteworthy was the US had to develop a 6,450 mile airbridge versus the Soviet's 1,700 mile bridge. [51:156-157]

Although significant as another example of an AMNI operation, the most important aspect of NICKEL GRASS was recognizing the critical role air refueling has in air mobility. Respecting diplomatic sensitivities associated with much of the world's dependence on Arab oil, the US carefully avoided airspace of any Mediterranean nation. Luckily, with its dependence on Lajes AB, Azores, as a staging base, the missions could be flown without relying on air refueling. However, had the Portuguese not permitted us to use Lajes, our mobility capability in this operation would have been severely restricted. Even though our C-5s were air refueling capable, we lacked enough trained pilots in air refueling to do the job. This captured the attention of airlift planners because it brought to light the Achilles Heel of air mobility--without global basing rights and sufficient numbers of air refuelable aircraft, we will never be able to guarantee world-wide air mobility. For it is aerial refueling that ensures "our forces have the global reach to deploy rapidly and to employ effectively." [62:52] Toward that end, MAC set in motion a program to train C-5 crews in air refueling and to convert all of their C-141s to air refuelers. [52:340-343]

Another lesson learned from NICKEL GRASS was air mobility provides the President another arrow in his quiver to guarantee our nation's commitments when other countries' national interests conflict with ours. Because of its ability to fly over long distances and around countries that refuse to allow overflight clearances, air mobility can provide American relief without relying on support from other nations.

Finally, with the fall of the Iron Curtain, the Air Force has undergone a period of down sizing and restructuring. As a part of that restructuring, on 1 June 1992, the airlift assets of the Military Airlift Command and the tanker assets of the Strategic Air Command were consolidated into one command called the Air Mobility Command (AMC). This command became "the lead command for requirements, operating procedures, aircrew training, tactics, standardization and evaluation, and overall fleet management for tanker and airlift aircraft." [15:56]

In its first year, AMC demonstrated its ability to "answer the call" in providing global reach for America. According to the information director of the US Agency for International Aid, the US provided relief assistance in about 60 disasters around the world in 1992. [16:14] The following is a chronological sampling of those missions in which AMC participated:

4 June A mission to Tajikistan in support of Operation PROVIDE HOPE--a massive relief effort for the people of the Former Soviet Union. Between June 1992 and May 1993, AMC moved 2,438 tons of cargo on 109 missions.

15 July AMC C-130s airlifted food and medical supplies into besieged Sarajevo, Bosnia supporting Operation PROVIDE PROMISE.

2-20 August Serving as a show of force exercise, AMC deployed US forces to Kuwait supporting Operation INTRINSIC ACTION.

12 August-7 October With negotiations completed and national elections pending in Angola, AMC C-130s airlifted "demobilized Angolan soldiers" to their homes marking an end to 16 years of civil war.

18 August To enforce the ban on Iraqi flights below the 32d parallel, AMC began airlifting forces to Saudi Arabia in support of Operation SOUTHERN WATCH. AMC tankers were also sent to support fighters flying combat air patrols.

25 August-28 October In the wake of hurricane Andrew, AMC delivered 13,500 relief workers and nearly 21,500 tons of supplies on 724 missions to southern Florida.

31 August Suffering the after effects of the 1986 Chernobyl nuclear accident, AMC flew 70 children on a C-141 from Minsk, Byelarus to Brussels, Belgium for medical treatment.

1-25 September After Typhoon Omar struck Guam, AMC operated 59 relief missions delivering 750 relief workers and almost 2,000 tons of supplies to the island.

12 September-18 October In the wake of Hurricane Iniki, AMC airlifted relief workers and supplies on 259 missions to the Hawaiian Islands.

13-29 September AMC moved nearly 1,000 UN peacekeeping forces and their supplies from Pakistan to Somalia in support of Operation IMPRESSIVE LIFT.

25 September AMC completed the last of the missions supporting the NATO Minister's Agreement to drawdown US nuclear weapons in Europe.

23-25 October When fighting broke out in Liberia, AMC evacuated US citizens and embassy officials from Monrovia, Liberia.

4-11 November Responding to an urgent request from the Armenian government, AMC C-5s and C-141s delivered 236 metric tons of flour into Yerevan, Armenia.

6-20 December AMC moved 415 tons of engineering vehicles and equipment to Islamabad, Pakistan to help with their flood relief. [4:4-6]

The real test of AMC's new structure occurred between mid-August 1992 and 4 May 1993 when the US and 22 other nations conducted Operations PROVIDE RELIEF and RESTORE HOPE, the US and UN sponsored humanitarian relief missions to safeguard the delivery of food to starving Somalis. [35:V-15]

After years of civil war, drought, and famine, the situation in Somalia reached such a point at which the world could no longer sit back and watch a country whither away. When humanitarian organizations launched a world-wide appeal for help, the US sprung into action. In mid-August 1992, President Bush directed an airlift of food and supplies to starving Somalia calling this Operation PROVIDE RELIEF. Instability in Somalia prevented safe passage of flights through their airspace, so US airlift initiated the first relief flights out of neighboring Mombasa, Kenya. When the suffering continued and the US realized they could not do this operation alone, President Bush initiated an expanded operation under the auspices of the United Nations, called Operation RESTORE HOPE. More than 38,000 troops from 22 nations participated in this operation. [35:V-15]

After AMC combat control teams, along with support from the Marines, secured the airfield at Mombasa, Somalia (the only airfield in Somalia capable of handling a large aircraft) they discovered the airport was nothing more than a dilapidated runway with no support infrastructure. Once this news was relayed back to the US, AMC immediately set out to establish an air bridge from the US to Egypt and Saudi Arabia. The air bridge consisted of tanker aircraft being positioned off the coast of the US and above the Mediterranean Sea. This made it possible for airlifters to take off from California, fly non-stop to the theater with two air refuelings in-between. The crews would land in either Egypt or Saudi Arabia, change to a fresh crew and fill up with enough fuel to fly round trip to Mogadishu, minimizing the time on the ground in Somalia. [21:34]

By 3 May 1993, AMC had flown 1,182 airlift missions in both operations, delivering 51,431 passengers and 41,243 short tons of cargo. The tankers completed 1,170 air refueling missions and offloaded 82.4 million pounds of fuel. Relief organizations estimated both operations saved over a million people from dying of starvation. [4:5] In the end, General Ronald R. Fogleman, Commander, AMC, asserted, "The Somalia mission was a test case and a major milestone for AMC. It marked the first time that we employed

Air Mobility Command in its [new] configuration, the first time that we really started using--taking the advantage of--the synergism between our tankers and our strategic airlifters." [21:32]

The Somalia operation taught us several lessons we can add to our air power doctrine:

- The synergy of using a combination of tanker and airlift aircraft in air mobility operations provide a major force projection capability in both war and operations other than war.
- Tanker aircraft can be used as a force extender in air mobility operations to the far reaches of the globe.
- Air mobility means having the capability to operate from an austere location, on a grand scale, with no supporting infrastructure, halfway around the world.

This concludes the discussion of how air mobility came to be what it is today--the world's largest and most respected instrument of non-lethal air power. Ironically, it achieved this status without the help of doctrine. Air mobility came into its own with the help of great people, enterprising minds and vision. These pioneers recognized the value of air transportation and its applicability in supporting national objectives.

CHAPTER THREE

IT'S TIME WE EXPAND OUR AIR POWER DOCTRINE

We have established the process of developing national strategy. We have also seen examples of how air mobility and its non-lethal application of airpower has played an important part in our history. Now, let us examine what role the non-lethal aspect of air power will play in supporting national security strategy today and in the future. To do this, we will first look at the global situation today, our national interests and objectives, and President Clinton's strategy for meeting those objectives. Next, we will examine Air Mobility Command's non-lethal application of air power and its ability to support our national strategy. Finally, we will close by proposing changes to the future re-write of AFM 1-1.

National Strategy in the Nineties

The end to the Cold War and the dissolution of the Soviet Union has precipitated a radical change to global security. As the once communist dominated countries began to test their new wings of freedom, the world has suddenly become more complex. Since there is no longer any reason to focus on preventing nuclear war or for nations to concern themselves with aligning to a bi-polar world, most nations are turning to other interests, such as, government, economics, culture, religion, and nationalism. Simultaneously, troubling threats are brewing which could potentially threaten our security interests. Russia is going through rebellion in its republics, former communist countries in Central and Eastern Europe are finding it difficult to make democracy work, weapons of mass destruction pose a serious threat of spreading, religious fanatics are inciting violence, and there is a resurgence of militant nationalism. All of this makes for a very unstable world and an inherent need for a strategy that will deter aggression by fostering more peaceful means of resolving conflict before wars begin. [61:1]

Today, the US can expect to be more involved in diplomatic, socioeconomic, and military efforts to resolve these conflicts before they directly affect our interests. The US seeks to promote the spread of freedom, democracy, and expansion in our market economy. [37:I-1] By expanding our market bases abroad, this will increase exports and create more American jobs. This, in turn, improves our living conditions and fuels political liberalization abroad. As new democracies develop about we become more secure because democratic governments tend not to wage war or encourage terrorism. [40:209]

To advance these interests, President Clinton has decided we must focus on three main national objectives, enhance our security, promote prosperity at home, and promote democracy. To make this happen he has developed a national strategy called "engagement and enlargement." Through "enlargement" he wants to expand the number of market based democracies in the world while deterring and containing any threats to our nation interests or our allies. [60:2] His strategy of "engagement" is based on the judicious employment of our instruments of national power (political, economic, information, and military) to secure these objectives. His strategy states that "our leadership must stress preventive diplomacy--through such means as support for democracy, economic assistance, overseas military presence, military-to-military contacts and involvement in multilateral negotiations in the Mideast and elsewhere--in order to help resolve problems, reduce tensions and defuse conflicts before they become crises." [60:5]

Deciding when and how to employ our military power to support this strategy is our leader's next challenge. Our national interests will help him decide the extent to which this power will be used. If our vital interests are at stake, he will direct our use of force to be decisive. If there are situations which pose less of a threat to our interests, such as those interests which might fall into Nuechterlein's third or fourth intensity level, then the application of force will be consistent to make the most effect. [60:10] Therefore, the military establishment must be capable of providing a variety of force applications to support the President's strategy.

The military must have options at their disposal for him to use that are conducive to influencing the outcome. In other words, we must have available the right tool in our tool bag for him to do the job. If the job requires the force of a hammer to influence the outcome, we should provide him with one. If the job requires steady pressure, then a vice might be pulled from our tool bag.

This concept can also be applied to the use of aerospace power. That is, if the objective is to destroy a target, such as we did in Libya when we bombed Col Kadhafi's terrorist training compound, then the force applicator is the fighter-bomber to drop bombs on the target. However, if objective is to demonstrate our will to diffuse a diplomatic crisis, such as we did during the Soviet blockade of Berlin, then the force applicator was airlift to deliver humanitarian aid so that negotiators had time to wear down the Soviets will.

President Clinton's strategy calls for the military to be capable of playing a leading role in defending our common interests to ensure that the US will retain an influential voice in international affairs politically, economically, and militarily. To protect and advance US interests from dangers and opportunities mentioned above, the President's strategy calls for the US military to have flexible forces (the tools) that can accomplish a variety of tasks (the job). In his national security strategy, President Clinton requires our military force to be proficient in dealing with major regional contingencies, providing a credible overseas presence, countering weapons of mass destruction, contributing to multilateral peace operations, and supporting counterterrorism efforts and other national security objectives. [60:7]

The question is, do we have all the tools in our arsenal of aerospace power to support this strategy and, if we do, do we have a doctrine which allows the strategist to employ these tools properly? The short answer is yes to the first part of the question, but no to the second part. Let's examine these questions using Air Mobility as our model.

Meeting the Challenge

As we saw in chapter two above, history has taught us that air mobility is aerospace power. General Rutherford, Commander of AMC, said, "Air mobility assets provide the National Command Authorities (NCA) an array of options to achieve national security objectives. Air mobility's unique characteristics of range, flexibility, and speed enable the US to posture forces decisively to stem aggression, demonstrate resolve, or send a strong message to deter potential opponents." [6:Forward] As we withdraw our permanent forces from abroad, our new strategy of peacetime engagement through forward presence will require more reliance on the forces based in the US to be able to deploy rapidly to deal with future regional crises. Air mobility is the cornerstone of our defense arsenal that allows us to meet this challenge. We possess the tools that are "agile, flexible, swift and far reaching" to apply non-lethal air power anywhere around the globe to protect or enhance our nation's interests. [5:18]

Recommendations for New Doctrine

Unfortunately, the Air Force lacks the written doctrine on the non-lethal application of aerospace power for the strategist to properly and fully develop his strategy. Hence, I propose new doctrine be written to accommodate the broader spectrum of aerospace power. This new doctrine should reflect what we have learned through history and take into account the future which, in all likelihood, will include joint operations with our own forces as well as forces with our allies and coalition partners. As a start, I recommend the following changes be made to AFM 1-1.

First, we must incorporate the number one lesson we learned from World War II, which was, "the best way to win a war is to prevent it from occurring." [60:119] This changes the *raison d'être* of the Air Force from war to the prevention of war, as the first priority, and winning war, when prevention fails, as the second priority. Some may think this will distort our focus on preparing our forces to fight and win wars. I believe the opposite to be true. A priority in preventing war is to demonstrate to your potential adversary that you possess such an overwhelming amount of power (lethal and non-lethal), as well as, the will and skill to use it, that he will not want to threaten or attack your interests. Therefore, to accumulate this power, you would invest in a variety of the most technologically advanced weaponry and hardware, then educate, train and exercise your people on the use of this power. Additionally, by focusing on deterring wars, this will bring to light the advantages of using non-lethal applications of power as an instrument of influence. This will provide the strategist and national leadership with greater options to use in meeting national objectives.

Another purpose of the Air Force that must be added is the issue of jointness. No longer should the air power advocates preach that we can do it all from the air by ourselves. History has shown us that air power has been most successful when it was applied with the different services and government agencies working together. Therefore, I propose the following: To ensure success at deterring and winning wars, the Air Force must be a team, working as part of a larger team consisting of other services and/or US government agencies, all working in concert to secure our national interests and objectives.

The second area of AFM 1-1 I recommend changing is the definition of aerospace power. We need to move away from the aspect that aerospace power is only used as a medium for military purposes. The definition needs to be restated as follows: Aerospace power is the ability to exploit the air and space medium for purposes of supporting our national interests. This broadens the spectrum of aerospace power

giving our nation (not just the military establishment) the opportunity to take full advantage of this part of our national power. It means air power can be used in lethal or non-lethal ways for military or non-military reasons and still support our nation's objectives. Air power gives the US unique strengths for building influence around the globe. This means we can use airpower to influence world situations for diplomatic and humanitarian reasons in support of international objectives before resorting to violence.

The final area of Air Force doctrine that needs to be corrected is in its roles and missions section. AFM 1-1, Section C, paragraph 2-4d, says "Force application brings aerospace power to bear directly against surface targets." [1:6] As I stated above, "bombs on target" is not the only way to apply air power. Therefore, taking from chapter two of this paper the lessons we learned about air mobility and its non-lethal applications of aerospace power in support of US interests, I propose the following roles and missions of air mobility be added to AFM 1-1:

- Air mobility is a vital component of aerospace power.
- Air mobility provides the global reach for America anywhere, anytime to support its national objectives.
- The synergy of using airlift and air refueling assets in combination, enables America's global power to be quickly projected anywhere around the world.
- With its air movements of national influence, air mobility provides stability in regions of the world by keeping American presence and prestige visible.
- Air mobility strengthens bonds between America and countries receiving humanitarian assistance or disaster relief.
- Air mobility's rapid response to nations in need symbolizes America's resolve to diffuse crises, build trust, and create a favorable impression of our nation and the principles on which we stand.
- Air mobility provides our National Command Authorities with options to guarantee our nation's commitments.
- Air mobility provides a non-lethal means with which to allow time for policy makers to negotiate peaceful settlements to conflict.
- Air mobility means being able to operate on a grand scale from an austere location with no supporting infrastructure anywhere in the world, anytime.

If history really is our guide to writing doctrine for future application, and since doctrine matures as it evolves, then we must accept the lessons history taught us about air mobility. The changes to our Air Force doctrine I have proposed above, reflect these lessons and the true capabilities air mobility offers to the non-lethal aspect of aerospace power. This, in turn, will become our new guide for future applications of air power and development of national strategy.

The Future

Since the end of the Cold War, the world has become more unstable yet more international in resolving crises. We can expect in future crises, nations will likely be working together as a team more often than not solving global instability. During an address to the UN General Assembly, President Bush mapped out a strategy for enhancing future international peacekeeping capabilities. He urged nations to develop and train military units for peacekeeping operations and humanitarian relief. He suggested that these units conduct multi-national training and develop a command and control strategy. [18:721-723] It appears that President Clinton also supports this strategy as evidenced by today's international involvement in Bosnia and Haiti.

With that in mind, our country has built the most powerful and most respected arsenal of air power unmatched by any other nation. This power gives us the 'muscle' to influence what is important to our nation's vital interests. Since we are the only country that has the mobility assets required to respond when hot spots flare up around the globe, there is no doubt that our nation's leaders will call on Air Mobility Command as their weapon of choice. With that being the path for our country's future, then we must be better prepared to operate in a multi-national arena. Toward that end, I challenge the gurus of air power theory to develop new doctrine that will enable us to succeed in this international environment. A doctrine that will exploit the full spectrum of aerospace power, including its lethal and non-lethal applications .

BIBLIOGRAPHY

1. Air Force Manual 1-1, Volume I, Basic Aerospace Doctrine of the United States Air Force, Washington DC: Department of the Air Force, March 1992.
2. Air Force Manual 1-1, Volume II, Basic Aerospace Doctrine of the United States Air Force, Washington DC: Department of the Air Force, March 1992.
3. Air Mobility Command, 1995 Air Mobility Master Plan, Scott AFB, IL: HQ AMC/XPDI, 1995.
4. Air Mobility Command, A Brief History of the Air Mobility Command, Scott AFB, IL: HQ AMC/HO, June 1993.
5. Air Mobility Command, Flight Plan, US Government Printing Office, 1994.
6. Air Mobility Command, Flight Plan, US Government Printing Office, 1995.
7. Air Mobility Command, The Air Mobility Team...Responsive Reach for America...Every Day!, (Brochure), Scott AFB, IL: HQ AMC, April 1994.
8. Air Mobility Command, White Paper: In Support of Global Reach, Scott AFB, IL: HQ AMC, August 1994.
9. Albright, Madeleine K., "Strengthening the Coordination of Humanitarian Emergency Assistance." US Department of State Dispatch, Volume 4, No. 49, December 6, 1993, P. 834.
10. Arnold, Edwin J., Jr., "The Use of Military Power in Pursuit of National Interests." Parameters, Volume 24, No. 1, Spring 1994, p. 4-12.
11. Baker, Bud and Casey, Dennis, Fuel Aloft: A Brief History of Aerial Refueling, (Publisher unknown)
12. Baker, James A., III, "Selective Engagements: Principles for American Foreign Policy in a New Era." Vital Speeches, 1 March 1994, p. 299-302.
13. Boudreau, Robert N., "The New AFM 1-1: Shortfall in Doctrine?" Air Power Journal, Maxwell AFB, AL: Air University Press, Winter 1992, p. 37-47.
14. Boutros-Ghali, Boutros, "An Agenda For Peace." UN Chronicle, September 1992, p. 2-4.
15. Brunkow, Robert DeV, Toward the Air Mobility Command: A Chronology of Tanker and Airlift, Scott AFB, IL: HQ AMC/HO, 1993.
16. Buckley, Michael, "Global Reach, Global Relief, Global Hope." Sergeants, No. 2, March 1993, p. 10-14.
17. Builder, Carl H., The Icarus Syndrome: The Role of the Air Power Theory in the Evolution and Fate of the US Air Force, New Brunswick: Transaction Publishers, 1993.
18. Bush, George, "The United Nations: Forging A Genuine Global Community." US Department of State Dispatch, Volume 3, No. 34, September 28, 1992, p. 721-724.
19. Cahill, Kevin M., "A Necessary Balance." America, Volume 169, No. 5, August 28, 1993, p. 6-10.
20. Callender, Bruce D., "A History of Helping." Air Force Magazine, April 1993, p. 76-79.
21. Canan, James W., "A Model For Mobility." Air Force Magazine, September 1993, p. 32-37.

22. Covault, Craig, "NATO Eyes Protection for Military Transports." *Aviation Week and Space Technology*, March 14, 1994, p. 52-53.
23. Department of the Navy, *Naval Doctrine Publication 1, Naval Warfare*, Washington DC: US Government Printing Office, March 1994.
24. Drew, Dennis M. and Snow, Donald M., *Making Strategy: An Introduction To National Security Processes and Problems*, Maxwell AFB, AL: Air University Press, August 1988.
25. Eichhorst, Thomas E., *Military Airlift: Turbulence, Evolution, and Promise for the Future*, Maxwell AFB, AL: Air University Press, May 1991.
26. Estep, David G., *Air Mobility: The Strategic Use of Non-Lethal Airpower*, Maxwell AFB, AL: Air University Press, June 1994.
27. FM 100-5, *Operations*, Washington DC: US Government Printing Office, June 14, 1993.
28. Fogleman, Ronald R., "Air Mobility: A Key to Success in Joint Warfare." *Vital Speeches*, Volume LIX, No. 14, p. 418-421.
29. Fulgum, David A., "Restrictions Shape Somalia Airlift." *Aviation Week and Space Technology*, December 14/21, 1992, p. 24.
30. Hartman, Frederick H. and Wendzel, Robert L., *America's Foreign Policy in a Changing World*, New York: Harper Collins College Publishers, 1994.
31. HQ Air Combat Command, *Theater Airlift Conference, Minutes*, November 15-17, 1994.
32. Hoar, Joseph P., "A CINC's Perspective." *Joint Forces Quarterly*, Autumn 1993, p. 56-63.
33. Huntington, Samuel P., "New Contingencies, Old Roles." *Joint Forces Quarterly*, Autumn 1993, p. 38-43.
34. Huntington, Samuel P., "Why International Primacy Matters." *International Security*, Volume 17, No. 4, Spring 1993, p. 68-83.
35. Joint Pub 3-0, *Doctrine for Joint Operations*, Washington DC: The Joint Staff, September 9, 1993.
36. Joint Pub 3-07, *Doctrine For Joint Operations in Low Intensity Conflict*, Washington DC: The Joint Staff, October 1990.
37. Joint Pub 3-07.1, *Joint Tactics, Techniques and Procedures for Foreign Internal Defense*, Washington DC: The Joint Staff, December 20, 1993.
38. Joulwan, George A., "US Europe Command: Regional Challenges Abound." *Defense*, Issue 3, 1994, p. 11-21.
39. Kelleher, Catherine M. "Soldiering On." *The Brookings Review*, Spring 1994, p. 27-29.
40. Lake, Anthony, "From Containment to Enlargement: Current Foreign Policy Debates in Perspective." *Vital Speeches*, October 15, 1993, p. 13-19.
41. Levins, Harry, "Pentagon Official Visits Scott." *St. Louis Post Dispatch*, January 5, 1995, p. 3B.
42. Lowe, Merrie S., "Ops Tempo: The Effects." *Airman*, December 1994, p. 3-5.
43. Lynch, David J., "When the Mission is Aid." *Air Force Magazine*, February 1993, p. 60-64.

44. Magyar, Karl P., *Challenge and Response: Anticipating US Military Security Concerns*, Maxwell AFB, AL: Air University Press, August 1994.
45. Mann, Edward, "Military Support for 'Peace Efforts'." *Air Power Journal*, Fall 1993, p. 51-61.
46. Mears, Gary H. and Kim, Ted, "Logistics: The Way Ahead." *Joint Forces Quarterly*, Spring 1994, p. 38-44.
47. Mecham, Michael, "USAF Fills New Role with UN Relief Flights." *Aviation Week and Space Technology*, November 23, 1992, p. 104-105.
48. Mecham, Michael, "US Mercy Missions to CIS Show Technology is No Substitute for Airmanship." *Aviation Week and Space Technology*, March 9, 1992, p. 48-50.
49. Mehuron, Tamar A., "Airlifters Lend a Hand." *Air Force Magazine*, March 1993, p. 8.
50. Metz, Steven, "The Air Force Role in United Nations Peacekeeping." *Airpower Journal*, Winter 1993, p. 68-81.
51. Military Airlift Command, *Anything, Anywhere, Anytime: An Illustrated History of the Military Airlift Command, 1941-1991*, Scott AFB, IL: HQ MAC/HO, 1992.
52. Miller, Charles E., *Airlift Doctrine*, Maxwell AFB, AL: Air University Press, March 1988.
53. Morganthau, Tom, "Storm Warnings." *Newsweek*, September 14, 1992, p. 24-28.
54. Myers, Grover E., *Aerospace Power: The Case for Indivisible Application*, Maxwell AFB, AL: Air University Press, September 1986.
55. Post, Tom, "Airdrop America." *Newsweek*, March 8, 1990, p. 30-31.
56. Rice, Donald B., *Global Reach-Global Power: The Evolving Air Force Contribution to National Security*, Washington, DC: Department of the Air Force, December 1992.
57. Shultz, Richard H., Jr. and Pfaltzgraff, Robert L., Jr., *The Future of Air Power in the Aftermath of the Gulf War*, Maxwell AFB, AL: Air University Press, July 1992.
58. Smith, James B., "Airlift: Time to Look Beyond the Supporting Role." *Air Force Times*, August 30, 1993, p. 37.
59. Sullivan, Gordon R., "Doctrine: A Guide to the Future." *Military Review*, February 1992, p. 2-9.
60. *The United States Strategic Bombing Surveys*, Maxwell AFB, AL: Air University Press, October 1987.
61. The White House, *A National Security Strategy of Engagement and Enlargement*, Washington DC: US Government Printing Office, July 1994.
62. US Air Force, *Toward the Future: Global Reach-Global Power*, USAF White Papers 1989-1992, Washington DC: US Government Printing Office, 1992.
63. Vogel, Stephen F., "The Race to Save Rwanda." *Air and Space*, March 1995.